BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

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Order Instituting Rulemaking to Continue the Development of Rates and Infrastructure for Vehicle Electrification.	Rulemaking 18-12-006 (Filed December 13, 2018)

REPLY COMMENTS OF EVGO SERVICES LLC ON ORDER INSTITUTING RULEMAKING TO CONTINUE THE DEVELOPMENT OF RATES AND INFRASTRUCTURE FOR VEHICLE ELECTRIFICATION AND CLOSING RULEMAKING 13-11-007

EVgo Services LLC
Sara Rafalson
Director of Market Development
11390 W. Olympic Blvd. Suite 250
Los Angeles, CA 90064
Tel: (855) 509-5581
Email: Sara.Rafalson@evgo.com

GOODIN, MACBRIDE,
SQUERI & DAY, LLP
Michael B. Day
505 Sansome Street, Suite 900
San Francisco, California 94111
Telephone: (415) 392-7900
Facsimile: (415) 398-4321
Email: mday@goodinmacbride.com

Attorneys for EVgo Services LLC

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EVgo Services LLC (EVgo) respectfully submits the following reply comments in response to the California Public Utilities Commission's (CPUC or the Commission) December 19, 2018 Order Instituting Rulemaking (OIR) to continue the implementation and administration of transportation electrification (TE) programs, tariffs and policies. EVgo is supportive of the Commission's efforts to more closely coordinate TE investments to meet California's ambitious greenhouse gas reduction (GHG) and zero emission vehicle (ZEV) goals while supporting a robust competitive private market for charging infrastructure. We appreciate the consideration of our comments and look forward to further engagement on this proceeding.

I. INTRODUCTION

Headquartered in California, EVgo owns and operates more than 1100 public fast chargers and more than 1000 level 2 (L2) chargers operating in 34 states. The U.S. Department of Energy announced on October 22, 2018 that EVgo has the largest number of DC fast charging

stations of any network in the country.[1] In 2018, EVgo powered more than 75 million electric miles in 2018. Although approximately half of EVgo's fast chargers are located in California, more than 75% of our electricity dispensed in 2018 was within California, driven to a large extent by the rapid expansion of light duty vehicle (LDV) fleet electrification, including car sharing and ridesharing, which represented one third of all of our energy delivered in 2018.

Below, we have included reply comments utilizing new data that EVgo has compiled on LDV fleet electrification utilizing 2018 data. In particular, EVgo wishes to address Issue 12 identified in the OIR.

12. <u>Address emerging issues in the TE space including longer vehicle range, ridesharing fleet electrification, electrified micro-mobility services (e.g., shared electric scooters and bicycles), and the potential impacts of autonomous vehicles on charging infrastructure and the grid.</u>

As mentioned above, in 2018, EVgo increased its volume of electric miles powered by 88% compared to 2017, charging more than 75 million miles through its public network. Two critical reasons driving outsized demand on EVgo's public fast charging network from light duty fleet drivers are:

1. Rideshare drivers' vehicle miles traveled are up to seven times that of personal use drivers;
2. Fast charging represents the vast majority of charging for rideshare drivers, for whom every minute of charging represents lost potential revenue.

The extremely fast growth in demand on EVgo's public network by LDV fleets in 2018 has led to congestion, and in regional electric vehicle (EV) hot spots, saturation, across its California urban chargers. Given these trends, EVgo recommended in its initial comments that LDV fleet charging be considered, and several parties agreed.

[1]https://www.energy.gov/eere/vehicles/articles/fotw-1052-october-22-2018-four-networks-maintain-over-60-22343-level-2-and-dc

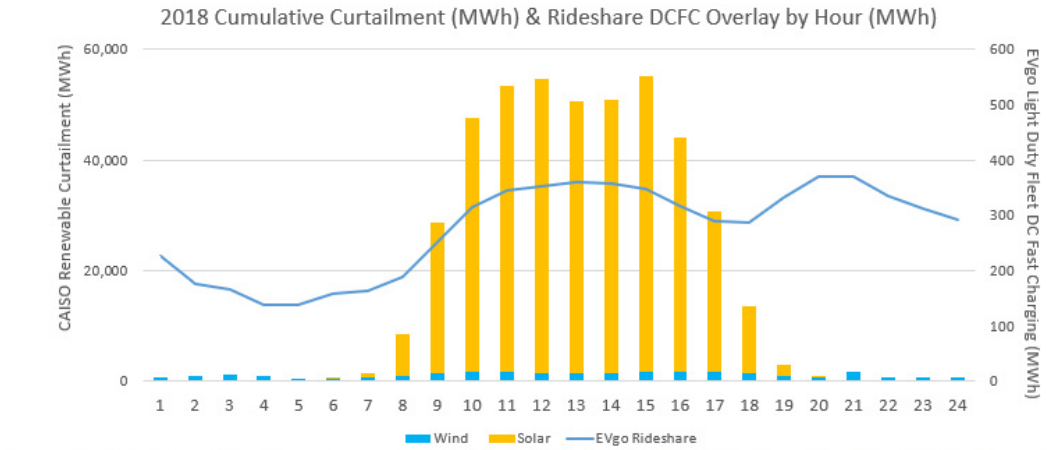
For example, Advanced Energy Economy writes that "it is important to proactively consider emerging issues in the TE space, including light-duty fleets (i.e., ride-sharing services like Uber and Lyft and car-sharing services such as ZipCar and Gig, etc.)."[2] General Motors LLC, The Alliance of Automobile Manufacturers, The Association of Global Automakers, Inc,, and Ford Motor Company agree and affirm that "charging needs for shared and autonomous fleet differ in many key ways from the retail consumer and heavy-duty fleet applications that have been the focus of utility programs and state assessments to date."[3] San Diego Association of Governments (SANDAG) affirms its support for the Commission to consider rideshare fleet electrification and electric micro-mobility,[4] and Sierra Club concurs, deeming rideshare electrification a "critical issue."[5]

Since filing opening comments on February 4, EVgo has completed analysis on 2018 data with its LDV fleet partners. Through this analysis, EVgo found that LDV fleets on EVgo's public network in California reduce midday renewable energy curtailment by gigawatt-hours (GWh), confirming a demonstrable and material benefit to the grid. Comparing the cumulative annual load profile by hour for fast charging by EVgo's LDV fleet with the CAISO 2018 cumulative renewable curtailment by hour demonstrates the alignment of LDV rideshare fast charging during midday hours. See Table 1 below. This data demonstrates CAISO system benefits even without the use of price signals, as EVgo pricing in 2018 did not incentivize

[2] Comments of Advanced Energy Economy, *Order Instituting Rulemaking to Continue Development of Rates and Infrastructure for Vehicle Electrification* [R.18-12-006] (filed Feb. 11, 2019), at p. 17.
[3] Opening Comments of Alliance of Automobile Manufacturers, Association of Global Automakers, Inc., General Motors LLC, and Ford Motor Co., *Order Instituting Rulemaking to Continue Development of Rates and Infrastructure for Vehicle Electrification* [R.18-12-006] (filed Feb. 11, 2019), at p. 14.
[4] See Opening Comments of San Diego Association of Governments, *Order Instituting Rulemaking to Continue Development of Rates and Infrastructure for Vehicle Electrification* [R.18-12-006] (filed Feb. 11, 2019), at p. 4.
[5] 1Opening Comments of Sierra Club, *Order Instituting Rulemaking to Continue Development of Rates and Infrastructure for Vehicle Electrification* [R.18-12-006] (filed Feb. 11, 2019), at p. 14.

charging during this time. These behaviors occurred without price signals because LDV fleet drivers seek to maximize driving time and revenue during the morning and evening rush hours and maximize charging midday and at night. Table 1 below displays EVgo's cumulative 2018 LDV fleet fast charging in MWh (blue line) aligning with the cumulative CAISO renewable curtailment in GWh. More than 45% of LDV fleet fast charging was performed during peak solar hours from 9 am through the 3 pm hour with more than 30% of charging during nighttime hours from 8 pm through the 4 am hour.

Table 1



Sources: CAISO Curtailment http://www.caiso.com/Documents/Wind_SolarReal-TimeDispatchCurtailmentReportDec31_2018.pdf
Rideshare, 2018 EVgo fast charging operational data

The 2018 operational data from EVgo's fast charging for LDV fleet demonstrates:

1. Elevated midday demand for fast charging, mitigating solar curtailment;
2. Reduced charging during the afternoon ramp, as drivers return to driving during rush hour;
3. A double benefit to the grid by reducing the depth of the duck belly as well as reducing the absolute ramp requirement during the duck neck period.

Based on the load profile shape shifting over the course of 2018, EVgo expects that congestion on its public network in high demand areas in the second half of the year pushed charging later

into the afternoon on average, indicating that the natural preference without congestion would further reduce afternoon rush hour charging and concentrate additional charging activity during periods of peak solar generation.

Thus, the opportunity to provide benefits to the grid from fast charging LDV fleets would likely increase if charging infrastructure programs were tailored to light duty fleets. These programs already exist in the medium-heavy duty space, but despite public policy goals and the passage of SB 1014, no such program currently exists for light duty vehicles. Given the grid optimization and public benefits of LDV fleet electrification, EVgo respectfully asks that the Commission consider programs targeted for LDV fleets, including car sharing and ridesharing, as part of the TEF.

II. CONCLUSION

EVgo thanks the Commission for initiating the this important OIR which we strongly believe will deliver tangible progress to help more quickly and efficiently electrify the transportation sector. EVgo appreciates the opportunity to provide comments, and looks forward to continued involvement in this proceeding.

Respectfully submitted February 26, 2019 at San Francisco, California.

EVgo Services LLC
Sara Rafalson
Director of Market Development
11390 W. Olympic Blvd. Suite 250
Los Angeles, CA 90064
Tel: (855) 509-5581
Email: Sara.Rafalson@evgo.com

GOODIN, MACBRIDE,
SQUERI & DAY, LLP
Michael B. day
505 Sansome Street, Suite 900
San Francisco, California 94111
Telephone: (415) 392-7900
Facsimile: (415) 398-4321
Email: mday@goodinmacbride.com

By */s/Michael B. Day*
Michael B. Day

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